

#### ELECTRICAL

- 1. EXISTING UNDERGROUND AND OVERHEAD ELECTRICAL SYSTEMS AND OTHER UTILITIES MAY BE IN PLACE AND NOT LOCATED ON THE PLANS. IT SHALL BE THE RESPONSIBILITY OF THE INSTALLER TO DETERMINE THE LOCATION OF THE UTILITIES AND TO PROTECT THESE FACILITIES AND THE PUBLIC DURING THE WORK.
- 2. ALL CONDUIT CONNECTIONS SHALL BE SEALED WITH A WEATHERPROOF SEALING COMPOUND, AS INDICATED BY THE ALABAMA DEPARTMENT OF TRANSPORTATION AND/OR REDSTONE ARSENAL.
- 3. THE CONTROLLER CABINET SHALL BE GROUNDED BY MEANS OF A 5/8" DIA.  $\times$  10'-0" COPPER CLAD GROUND ROD.
- 4. IF PLASTIC CONDUIT IS USED, A BONDED GROUND WIRE SHALL BE INSTALLED BY THE INSTALLER.
- 5. THE POWER SOURCE SHOWN ON THE PLANS ARE APPROXIMATE. PROVISION OF POWER IS THE RESPONSIBILITY OF THE INSTALLER IN CONJUNCTION WITH THE REDSTONE ARSENAL DPW.

## WORK AREA

- 6. THE INSTALLER SHALL PROTECT THE EXISTING CURB AND OTHER IMPROVEMENTS FROM DAMAGE DURING INSTALLATION OF SIGNAL EQUIPMENT AND IS REQUIRED TO REPLACE ANY IMPROVEMENTS THAT ARE DAMAGED.
- 7. THE INSTALLER SHALL PROVIDE ALL NECESSARY STANDARD CONSTRUCTION WARNING SIGNS, BARRICADES, DRUMS OR OTHER TRAFFIC HANDLING DEVICES AS REQUIRED BY THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES (LATEST EDITION).
- 8. THE INSTALLER SHALL BE REQUIRED TO ESTABLISH A SATISFACTORY GROWTH OF GRASS ON ALL AREAS DISTURBED IN PLACING THE SIGNALS OR IN HIS OPERATIONS.
- 9. IN CONJUNCTION WITH TRAFFIC SIGNAL INSTALLATION, REMOVAL AND SATISFACTORY DISPOSAL OF ANY MISCELLANEOUS ITEMS SUCH AS PAVEMENT, EXCAVATED MATERIALS, CURB AND GUTTER, CONCRETE, ETC., FROM THE JOB SITE SHALL BE PERFORMED BY THE INSTALLER.

## TRAFFIC SIGNAL POLES

- 10. THE REDSTONE ARSENAL DPW SHALL EXAMINE AND APPROVE THE LOCATION OF THE SIGNAL POLES BEFORE EXCAVATION IS BEGUN. UTILITY LOCATION IS THE RESPONSIBILITY OF THE INSTALLER.
- 11. IN RURAL AREAS OR UNCURBED URBAN AREAS THE REQUIRED SIGNAL SUPPORTS SHALL BE LOCATED AS FAR AS PRACTICABLE BEYOND THE PAVEMENT EDGE. A MINIMUM CLEARANCE OF TWELVE (12) FEET OUTSIDE OF THE EDGE OF THE TRAVELED WAY IN UNCURBED AREAS IS MANDATORY. IN CURBED AREAS SIGNAL SUPPORTS SHALL BE LOCATED AS FAR AS PRACTICAL FROM THE FACE OF CURB. A MINIMUM CLEARANCE OF TWO (2) FEET SHALL BE MAINTAINED BETWEEN THE FACE OF CURB AND ANY PART OF THE SIGNAL EQUIPMENT.
- 12. THE INSTALLER SHOULD PROVIDE POLE HEIGHTS SUFFICIENT TO ASSURE THAT THE LOWEST SIGNAL ON AN ASSEMBLY IS TO BE A MINIMUM OF 17'-0" FROM THE PAVEMENT, MAXIMUM HEIGHT IS TO BE 20'-0".

#### EQUIPMENT

13. ALL SIGNALS SHALL HAVE TUNNEL VISORS AND BACKPLATES. THE EXTERIOR SHALL BE YELLOW AND THE INTERIOR SHALL BE BLACK. BACKPLATES SHALL PROVIDE FOR A FIVE INCH BORDER AROUND THE SIGNAL HEAD.

- 14. THE INSTALLER SHALL FURNISH ALL MISCELLANEOUS HARDWARE AND EQUIPMENT FOR FURNISHING AND INSTALLING TRAFFIC CONTROL UNIT OR SYSTEM, SUCH AS BOLTS, NUTS, WASHERS, STRAND VISE, STEEL BARS, ETC.
- 15. TRAFFIC CONTROL EQUIPMENT USED ON THIS PROJECT SHALL BE PRE QUALIFIED AND APPROVED, IN ACCORDANCE WITH ALABAMA LAW (REGULAR SESSION 1980 ACT NUMBER 80—434), PRIOR TO THE LETTING OF THIS CONTRACT.
- 16. A LIST OF PRE-QUALIFIED TRAFFIC CONTROL EQUIPMENT APPROVED FOR THIS PROJECT IS AVAILABLE FROM THE ALABAMA DEPARTMENT OF TRANSPORTATION, OFFICE OF THE TRAFFIC ENGINEER.
- 17. TRAFFIC SIGNAL EQUIPMENT USED ON THIS PROJECT SHALL BE NEW, UNDAMAGED, AND FREE OF DEFECT.

#### SIGNAL

- 18. THE INSTALLER SHALL LOCATE EACH SIGNAL HEAD ON THE MAST ARM TO ENSURE THAT THE SIGNAL HEAD IS LOCATED ON THE EXTENDED CENTER OF THE APPROACH LANE FOR WHICH IT APPLIES OR AS SHOWN IN THE PLANS IN CONFORMANCE WITH THE MUTCD.
- 19. AFTER THE SIGNAL HEADS HAVE BEEN LOCATED ON THE MAST ARM THEY SHALL BE ALIGNED WITHIN A MAXIMUM TOLERANCE OF 2-1/2 DEGREES OF THE VERTICAL AXIS FROM THE ROADBED AND SHALL BE AIMED WITHIN A MAXIMUM OF 3 DEGREES EITHER SIDE OF THE EXTENDED CENTER OF THE APPROACH LANE TO WHICH IT APPLIES.
- 20. LAMPS USED IN TRAFFIC SIGNAL HEADS SHALL BE L.E.D.'S, UNLESS OTHERWISE NOTED AND SHALL CONFORM TO THE LATEST ITE STANDARDS FOR L.E.D. SIGNAL LAMPS, AND SHALL BE APPROVED FOR USE BY ALDOT. ANTI-SWAY LAMP DESIGN SHALL BE USED.
- 21. WHEN THE CONTROLLER IS IN THE FLASH MODE, THE SIGNALS SHALL FLASH YELLOW ON RIDEOUT ROAD AND RED ON SIDE STREETS.
- 22. ALL REQUIRED SPLICES IN TRAFFIC SIGNAL CABLE SHALL BE MADE IN SIGNAL HEADS ONLY. NO EXTERIOR SPLICING OF SIGNAL CABLE SHALL BE PERMITTED.

## MISCELLANEOUS

- 23. ALL SIGNAL AND STRIPING CONSTRUCTION SHALL COMPLY WITH ALL APPLICABLE ALABAMA DEPARTMENT OF TRANSPORTATION STANDARDS. STANDARDS SHALL INCLUDE BUT NOT BE LIMITED TO THE MANUAL ON UNIFORM TRAFFIC CONTROL DEVICES, ALABAMA SPECIAL AND STANDARD DRAWINGS, AND THE AMERICAN ASSOCIATION OF STATE HIGHWAY AND TRANSPORTATION OFFICIALS, A POLICY ON GEOMETRIC DESIGN OF HIGHWAYS AND STREETS, LATEST EDITION. IN THE EVENT OF A CONFLICT BETWEEN THE PLANS AND THE STANDARDS, THE INSTALLER SHALL CONTACT THE DESIGN ENGINEER TO RESOLVE.
- 24. PRIOR TO BEGINNING CONSTRUCTION, THE INSTALLER SHALL CONTACT AND MEET WITH TOM RICHARDSON W/ REDSTONE DPW. THE PURPOSE OF THESE DISCUSSIONS AND/OR MEETINGS WILL BE TO COORDINATE LOCATION OF ALL UNDERGROUND AND OVERHEAD UTILITIES AND SET INSPECTION SCHEDULES FOR CONSTRUCTION.
- 25. THE INSTALLER SHALL PROVIDE THE DESIGN ENGINEER WITH A COPY OF THE EQUIPMENT SUBMITTAL PACKAGE FOR REVIEW FOR COMPLIANCE WITH THE SIGNAL PLANS. IT IS THEN THE INSTALLER'S RESPONSIBILITY TO PROVIDE THE EQUIPMENT SUBMITTAL PACKAGE TO THE REDSTONE ARSENAL FOR OFFICIAL REVIEW AND APPROVAL. IT IS THE RESPONSIBILITY OF THE INSTALLER TO OBTAIN EQUIPMENT SUBMITTAL APPROVAL FROM THE ALABAMA DEPARTMENT OF TRANSPORTATION. THE INSTALLER SHALL PROVIDE THE EQUIPMENT SUBMITTAL PACKAGE IN A TIMELY MANNER SO AS NOT TO ADVERSELY IMPACT THE SCHEDULE FOR INSTALLATION OF THE SIGNAL.

- 26. THE INSTALLER SHALL FURNISH CERTIFICATION TO REDSTONE DPW, FROM A REGISTERED PROFESSIONAL ENGINEER, THAT THE DESIGNED POLE SIZE SHALL BE ADEQUATE FOR THE DESIGN WIND LOAD REQUIRED BY THE STATE OF ALABAMA DOT STANDARD SPECIFICATIONS FOR TRAFFIC SIGNAL POLES. THIS CERTIFICATION SHALL BE PROVIDED TO THE REDSTONE DPW PRIOR TO ANY WORK BEING PERFORMED ON THE PROJECT.
- 27. THE INSTALLER SHALL PROVIDE A SET OF AS-BUILT PLANS TO REDSTONE DPW UPON COMPLETION OF THE PROJECT.
- 28. THE TRAFFIC SIGNAL CONTROLLER, CABINET, AND RELATED EQUIPMENT USED ON THIS PROJECT SHALL BE BENCH TESTED PRIOR TO INSTALLATION. THE INSTALLER SHALL PROVIDE CERTIFICATION TO REDSTONE DPW THAT THE BENCH TEST HAS BEEN CONDUCTED BY A IMSA LEVEL II TECHNICIAN (OR BETTER).
- 29. THE REDSTONE DPW SHALL BE NOTIFIED A MINIMUM OF FIVE (5) DAYS PRIOR TO THE REQUIRED INSPECTION OF THE TRAFFIC SIGNAL.
- 30. FINAL INSPECTIONS SHALL BE CONDUCTED BY THE REDSTONE ARSENAL DPW. IT IS THE RESPONSIBILITY OF THE INSTALLER TO GAIN APPROVAL OF THE TRAFFIC SIGNAL CONSTRUCTION.
- 31. THE INSTALLER IS REQUIRED TO HAVE AN IMSA CERTIFIED LEVEL II SIGNAL TECHNICIAN ON SITE AT ALL TIMES DURING CONSTRUCTION ACTIVITY.
- 32. THE TRAFFIC SIGNAL INSTALLATION, CONTROLLER, AND RELATED EQUIPMENT SHALL BE MAINTAINED IN OPERATION BY THE INSTALLER FOR A PERIOD OF THIRTY (30) DAYS WITHOUT EQUIPMENT FAILURE BEFORE THE REDSTONE ARSENAL WILL ACCEPT MAINTENANCE OF THE TRAFFIC SIGNAL. ALL EQUIPMENT FAILURES SHALL BE CORRECTED BY THE INSTALLER DURING THIS THIRTY (30) DAY PERIOD. IN THE EVENT OF AN EQUIPMENT FAILURE DURING THE THIRTY (30) DAY BURN—IN PERIOD, THE THIRTY (30) DAY BURN—IN PERIOD SHALL BE RESTARTED ONCE THE FAILURE HAS BEEN CORRECTED BY THE INSTALLER.
- 33. THE REDSTONE ARSENAL SHALL PERFORM A FINAL INSPECTION OF THE TRAFFIC SIGNAL INSTALLATION AND WILL ACCEPT MAINTENANCE OF THE TRAFFIC SIGNAL ONLY AFTER THE INSTALLER HAS ADDRESSED ALL INSPECTION ITEMS TO THE SATISFACTION OF THE REDSTONE DPW.
- 34. THE TRAFFIC SIGNAL CONTROLLER AND CABINET TO BE USED ON THIS PROJECT SHALL BE A NEMA STYLE CABINET AND SHALL COMPLY WITH CURRENT REDSTONE ARSENAL STANDARDS FOR TRAFFIC SIGNALS. IT IS THE INSTALLER'S RESPONSIBILITY TO CONTACT THE REDSTONE DPW TO DETERMINE SPECIFIC TRAFFIC SIGNAL CONTROLLER SPECIFICATIONS AND APPROVED BRAND ALTERNATES.



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HUNTSVILLE

SIGNAL NOTES

NE GATEWAY - PACKAGE ROAD INTERIM IMPROVEMENTS

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NOVEMBER 14, 2011

C6.1

Transportation Engineering and Planning Consultants 3644 Vann Road, Suite 100

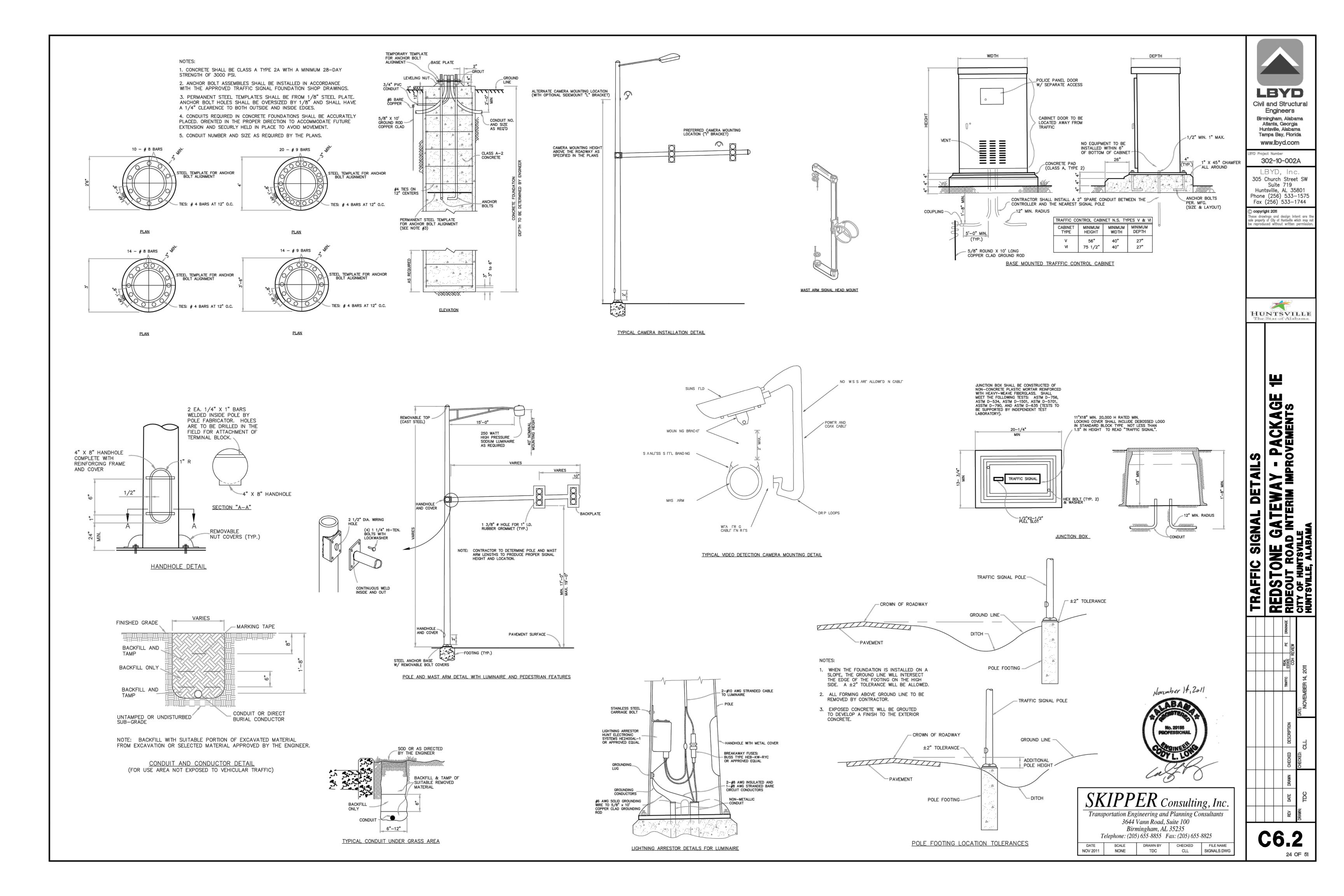
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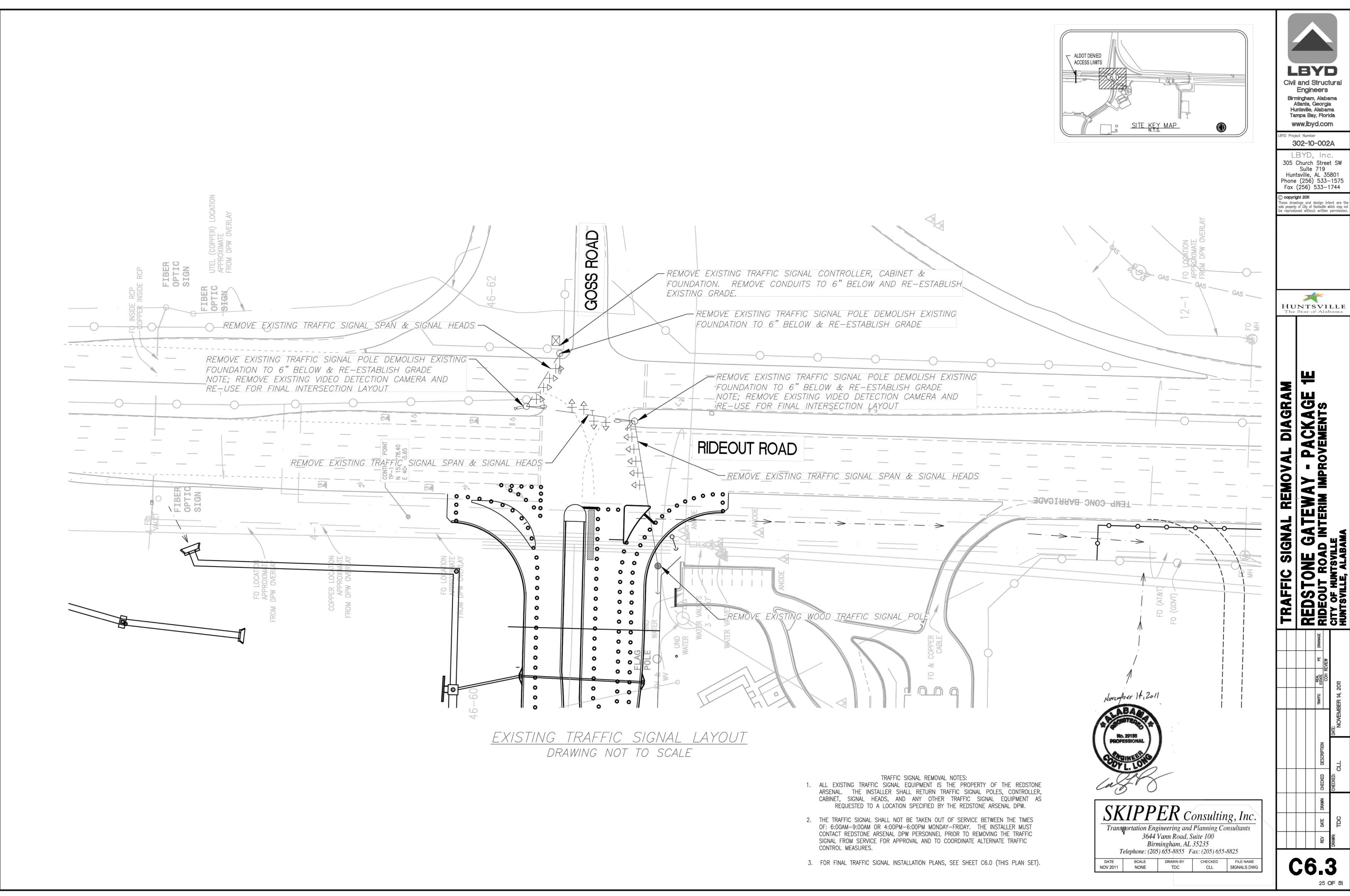
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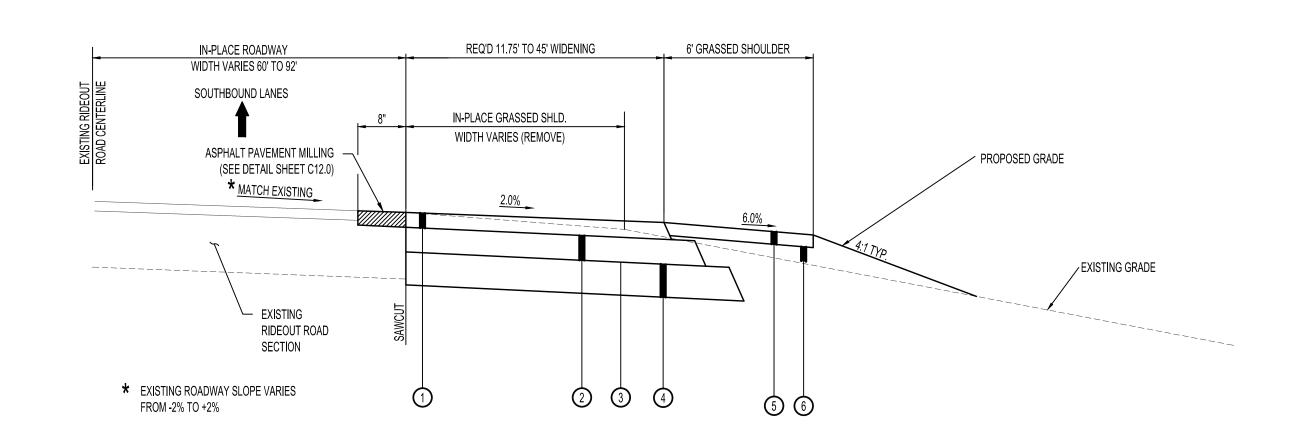
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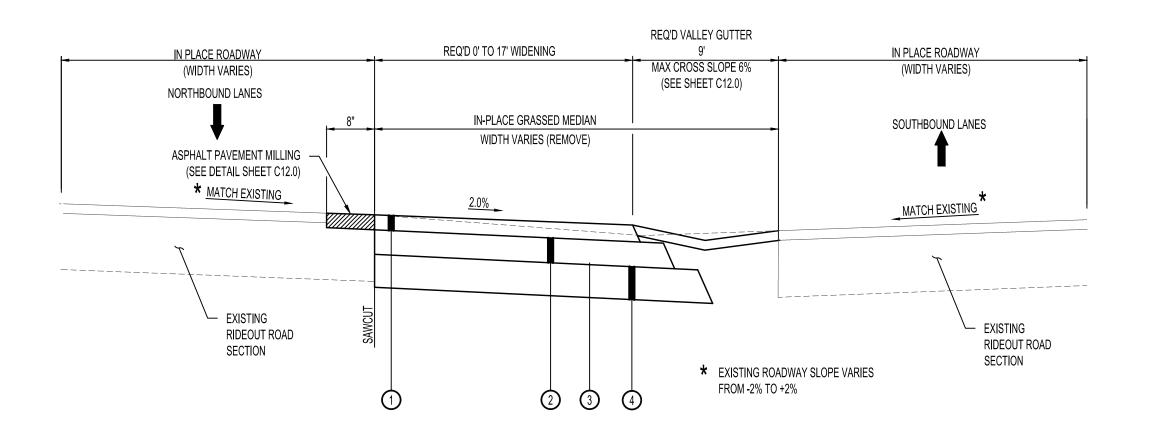
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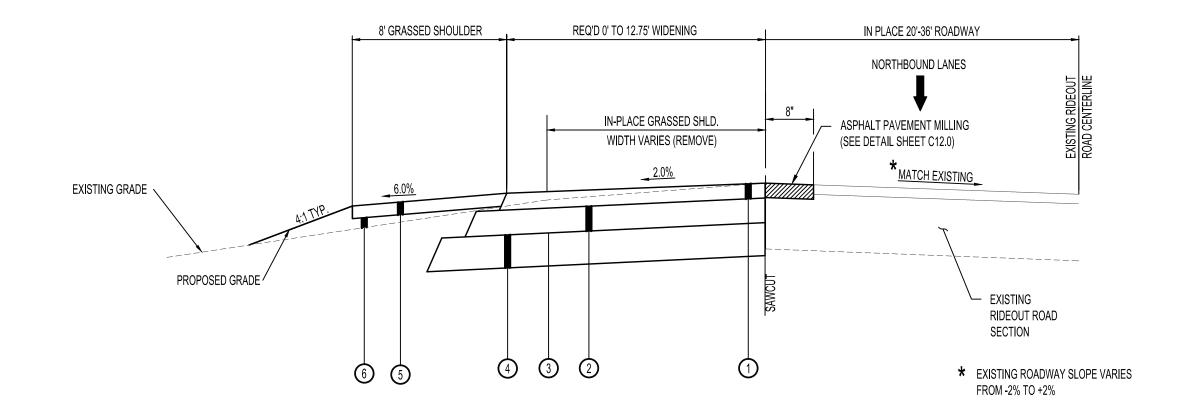




RIDEOUT ROAD (SOUTHBOUND) STA 20+00.00 TO 35+49.00



# RIDEOUT ROAD (NORTHBOUND MEDIAN WIDENING) STA 28+24.26 TO 33+67.00



RIDEOUT ROAD (NORTHBOUND THROUGH LANE) STA 25+56.00 TO 44+54.20

#### RIDEOUT ROAD REQUIRED MATERIALS LEGEND

LEGEND ITEM		ITEM DESCRIPTION
①	424 <b>-</b> A	SUPERPAVE BITUMINOUS CONCRETE WEARING SURFACE LAYER, $\frac{1}{2}$ " MAX AGGREGATE SIZE MIX, ESAL RANGE A, 165 LB/SY (1.5" THICK)
2	424-A	SUPERPAVE BITUMINOUS CONCRETE BINDER LAYER, 1" MAX AGGREGATE SIZE MIX, ESAL RANGE A, 550 LB/SY (5.0" THICK)
3	405-A	TACK COAT
4	825	8" CRUSHED AGGREGATE BASE, TYPE B, PLANT MIXED, 4" COMPACTED THICKNESS (2 LAYERS), ALDOT SPEC 825.
<b>(5)</b>	650A-000 650B-000	TOPSOIL(APPROXIMATELY 4" THICK) <u>OR</u> TOPSOIL FROM STOCKPILES(APPROXIMATELY 4" THICK)
6	210A-000 210D-000	UNCLASSIFIED EXCAVATION <u>OR</u> BORROW EXCAVATION

SPECIAL NOTES:
 SEE SHEET C1.0 FOR APPLICABLE PROJECT GENERAL NOTES.
 SEE SHEETS C4.0 THROUGH C4.4 FOR ADDITIONAL LAYOUT INFORMATION.
 SEE SHEETS C8.0 THROUGH C8.2 FOR RIDEOUT ROAD PLAN AND PROFILE.
 SEE SHEETS C11.0 THROUGH C11.8 FOR RIDEOUT ROAD CROSS SECTIONS.

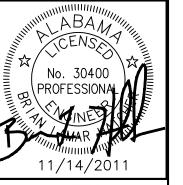
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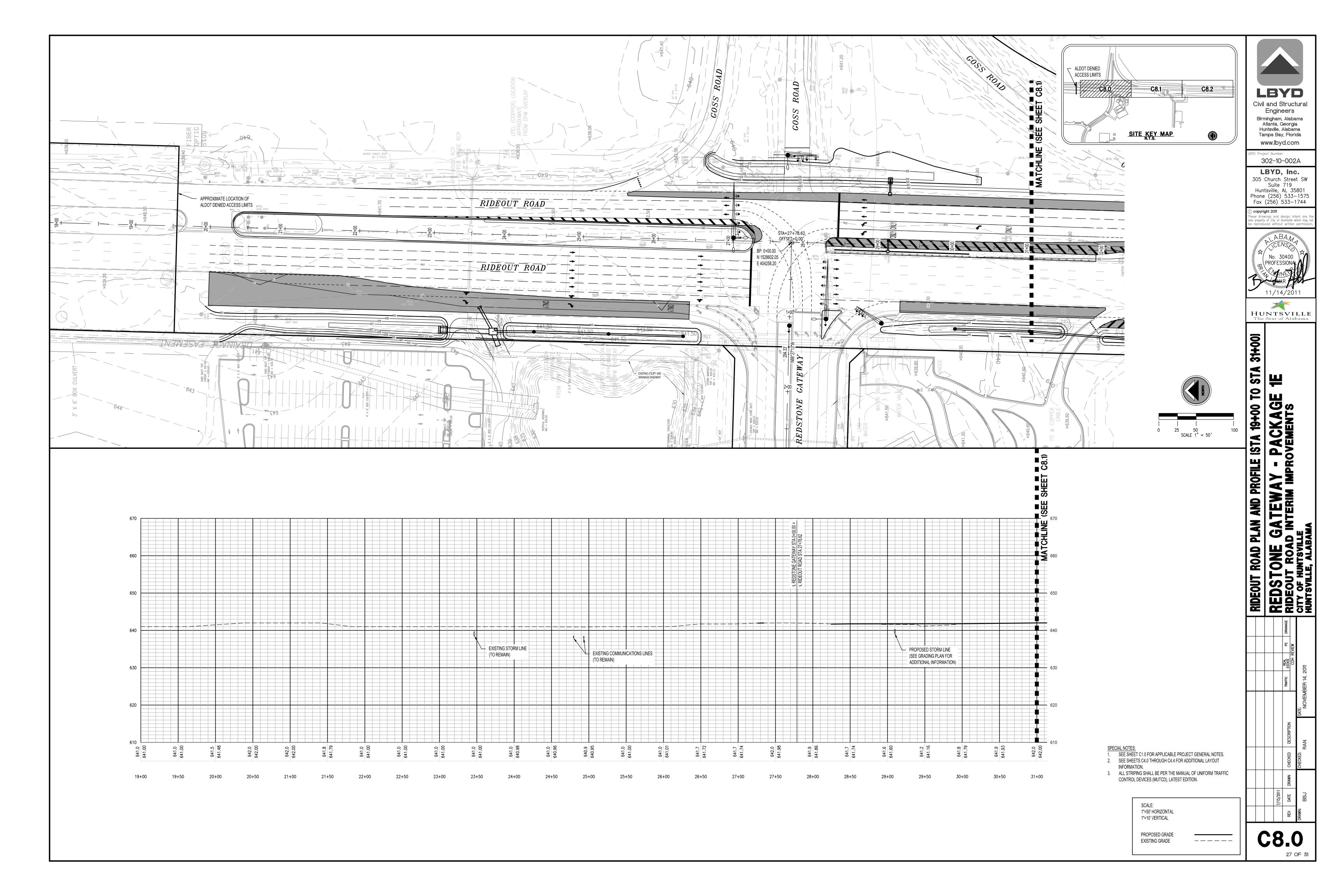
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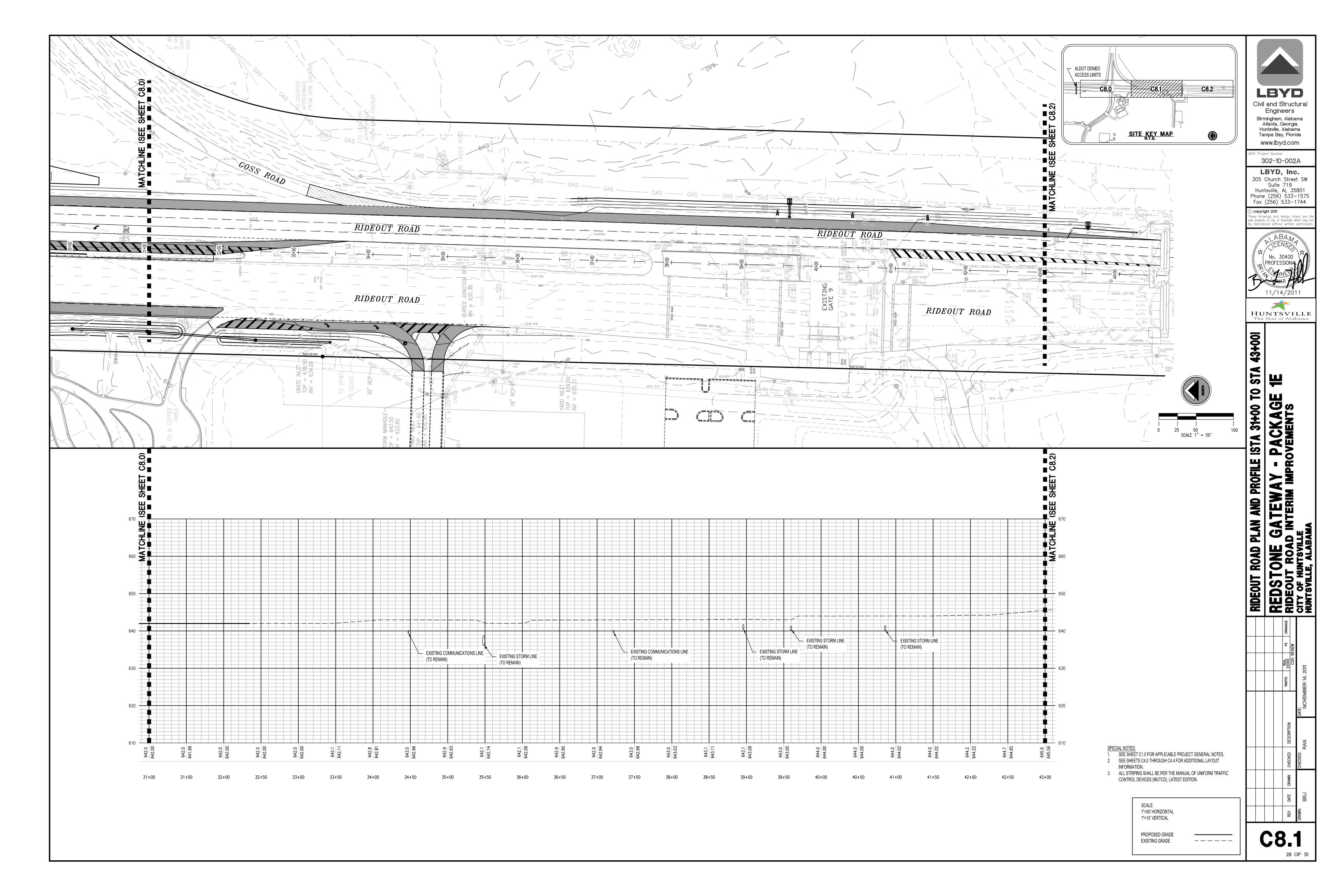
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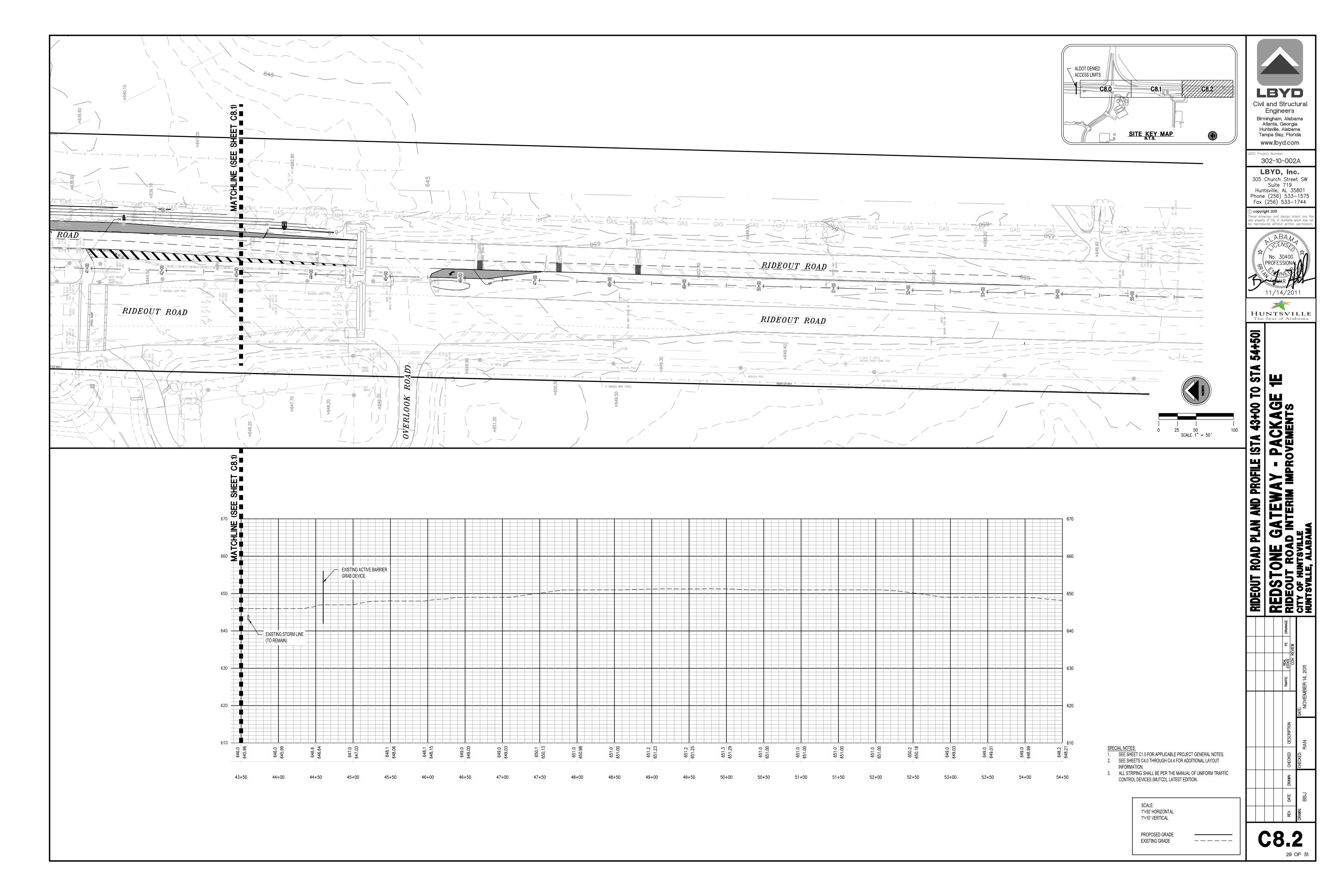


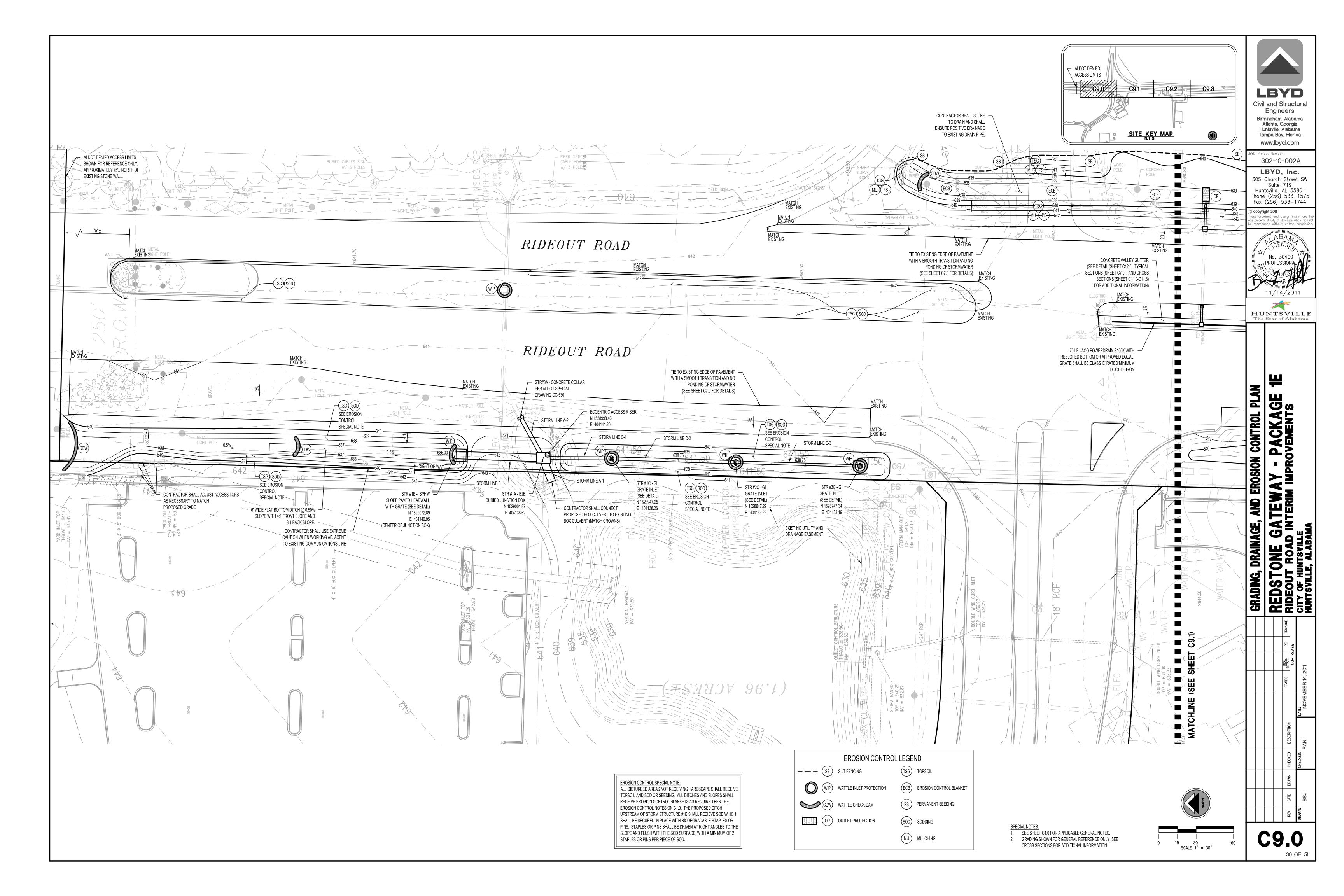
HUNTSVILLE The Star of Alabama

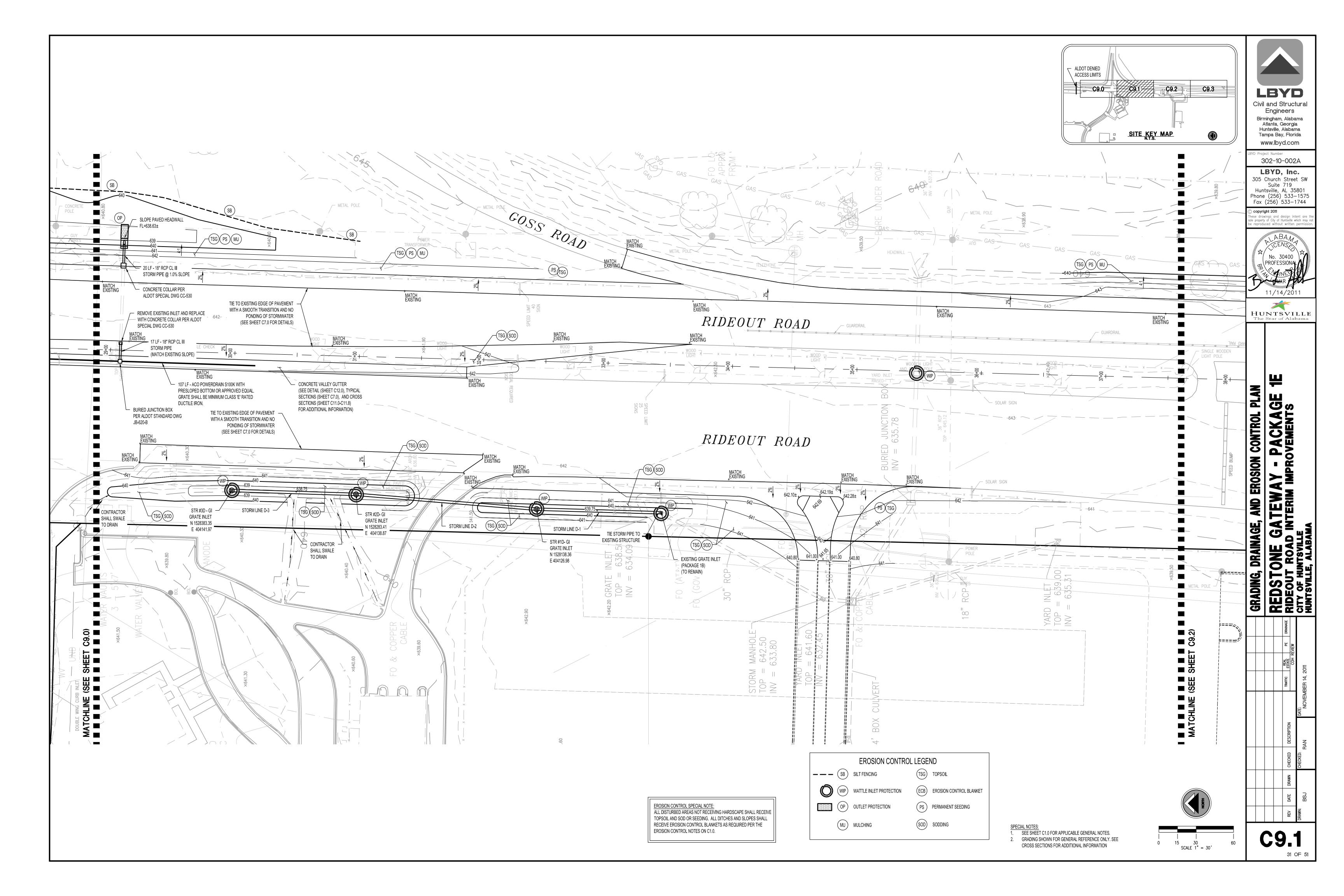
SECTIONS

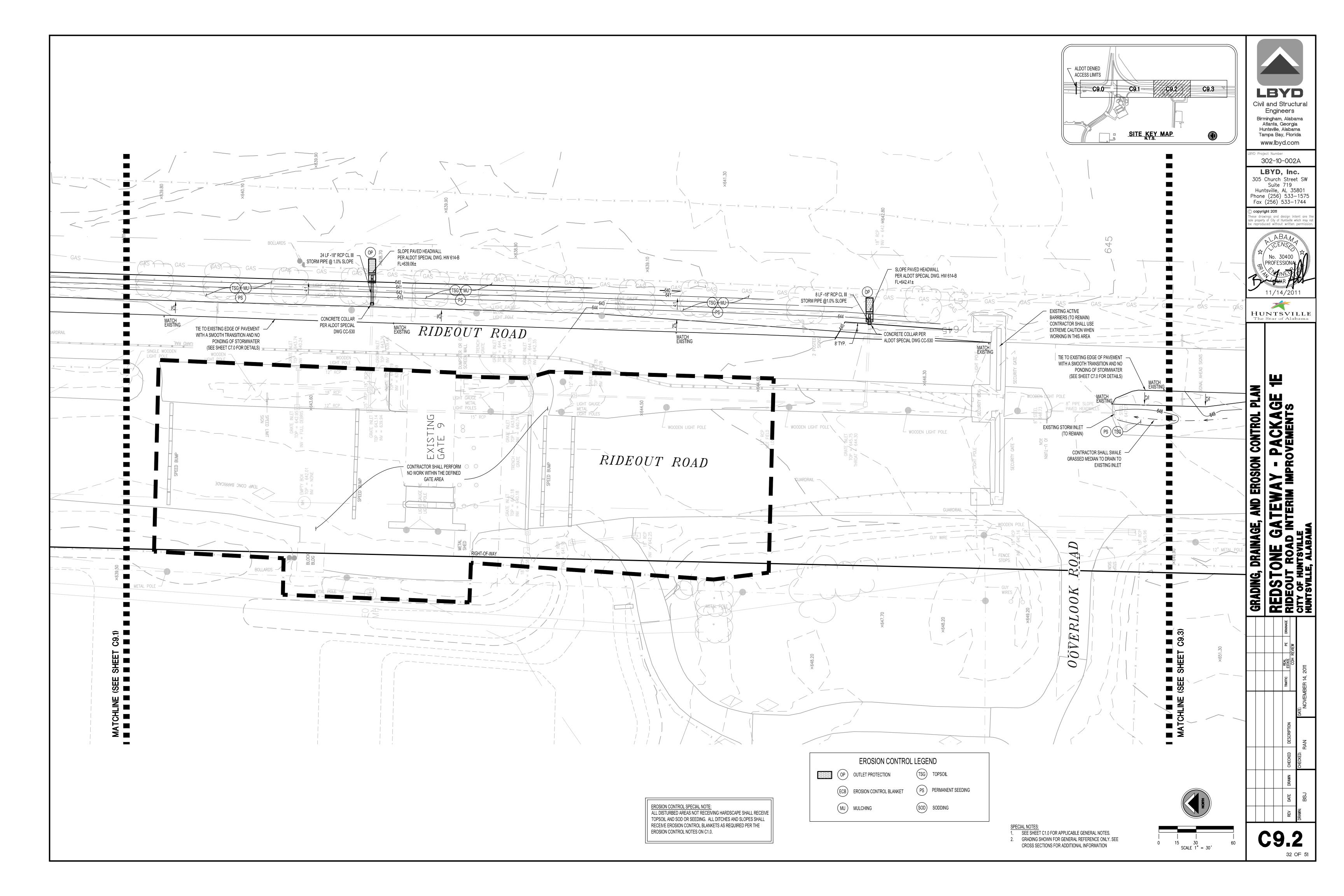


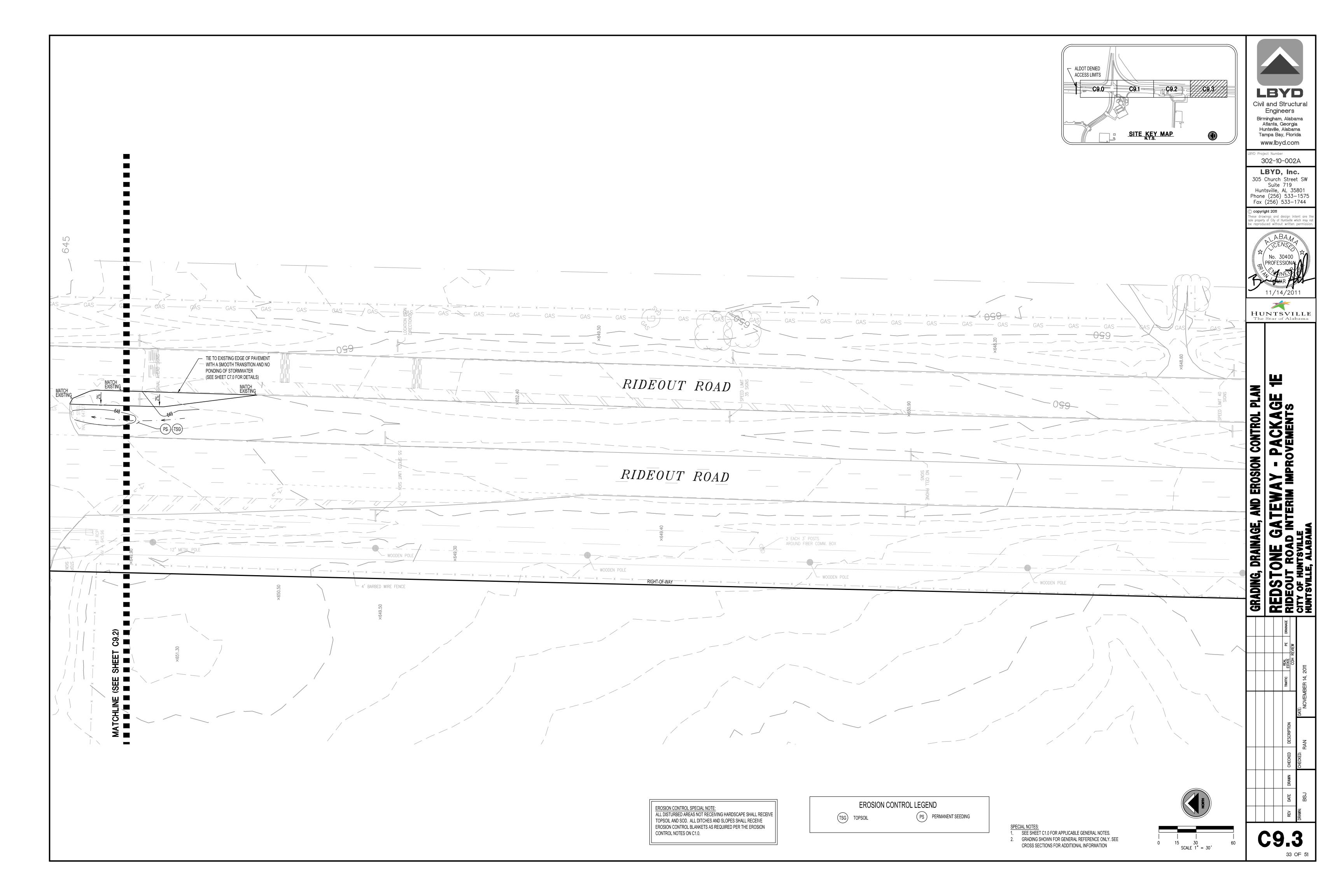


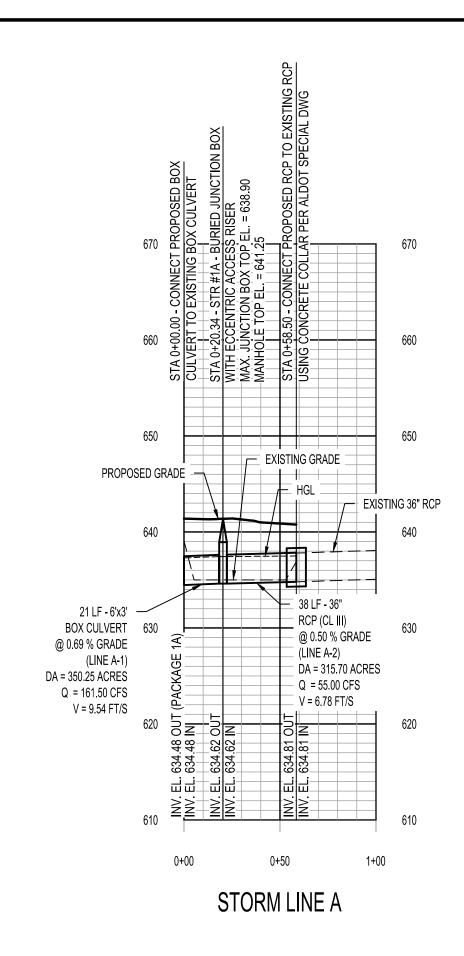


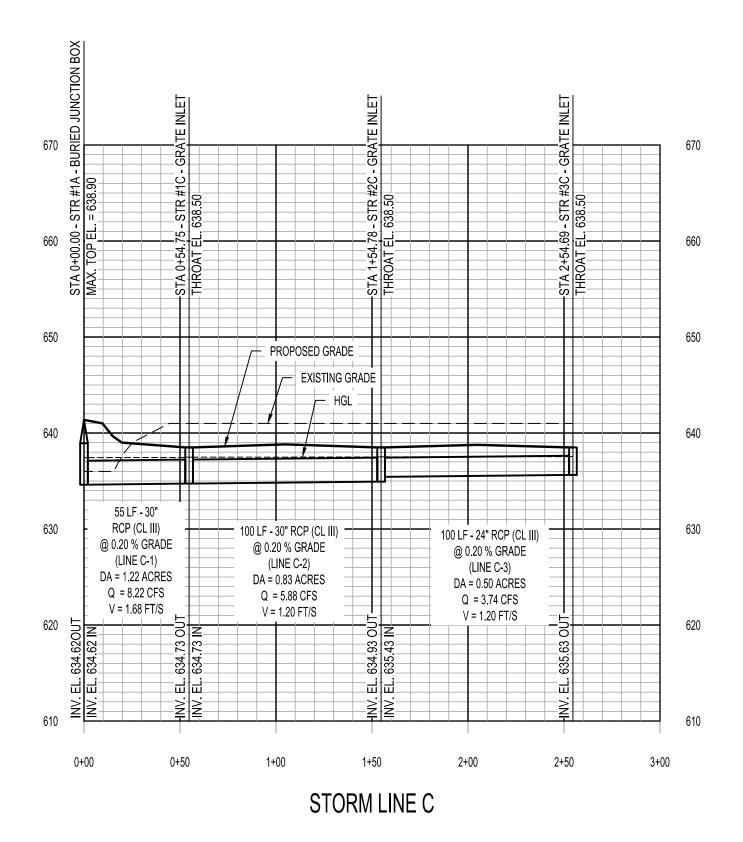


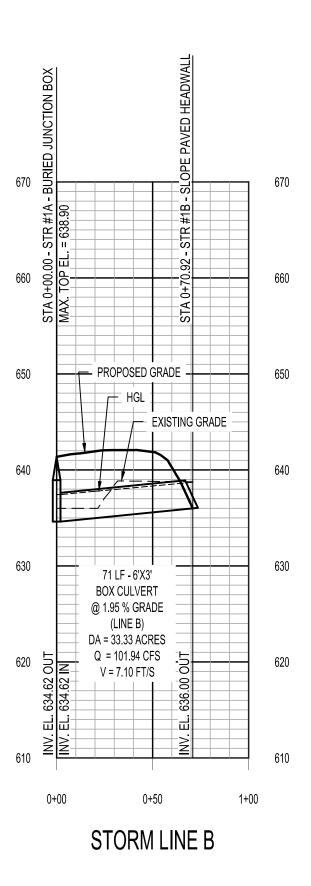


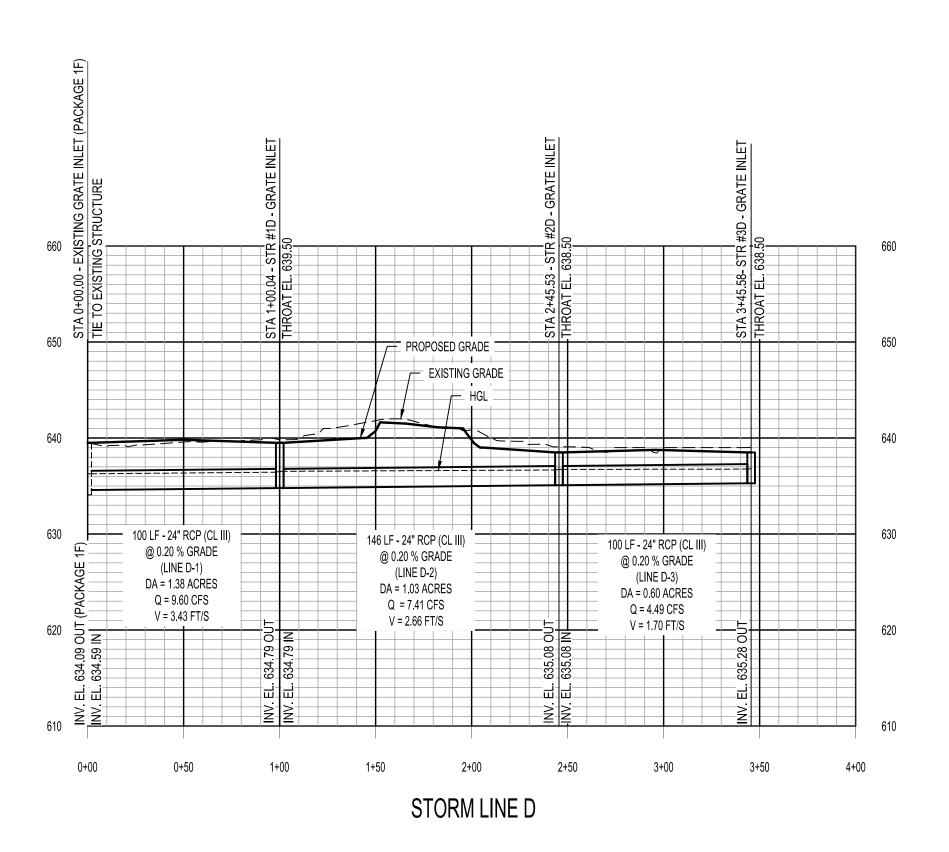












SPECIAL NOTES: 1. PIPES SIZED FOR THE 25-YEAR STORM 2. SEE SHEETS C9.0 - C9.3 FOR STORM PIPE LAYOUT INFORMATION AND GRADING

SCALE: 1"=50' HORIZONTAL 1"=10' VERTICAL	
HGL EXISTING GRADE PROPOSED GRADE STORM SEWER	

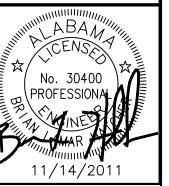
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C9.4